Date _____

A1 SOL Packet #1b

Translate Algebraic Expressions

Travis would like to buy some toys to donate to charity. He plans to buy 9 dolls at d dollars each, 2 toy cars at c dollars each, and 3 train sets at t dollars each. Which expression represents the total cost, in dollars, of these items that Travis wants to buy?

A $9c + 2t + 3d$

B $9d - 2c - 3t$

C $9d + 2c + 3t$

D $9c - 2t - 3d$

2013

Which statement could be represented by the expression $n^2 + 4n$?

A The square of a number increased by four

B The square of the product of a number and four

C The sum of two times a number and four times a number

D The square of a number increased by four times the number

2010

Lincoln High School earned $5,100 in ticket sales for a play. The cost per ticket was $12. Let t represent the number of tickets sold to the play. Which of the following equations could be used to determine how many tickets were sold to the play?

F $12 = 5{,}100t$

G $12t = 5{,}100$

H $t = 5{,}100 - 12$

J $t = 5{,}100 \cdot 12$

2010

The length of a certain rectangle is six more than three times its width. If the width of the rectangle is 4 units, what is its length?

A 10

B 13

C 18

D 27

2009

If 112 children sign up for a field trip and each vehicle carries x children, which expression could be used to determine the number of vehicles needed for the trip?

A $112 - x$

B $112x$

C $\frac{112}{x}$

D $\frac{x}{112}$

2008

Joe, who is the youngest member of the wrestling team at Northwood High School, is 5 years less than one-half the age of the coach. If the coach is n years old, which expression describes Joe's age?

F $\frac{1}{2}n - 5$

G $5 - \frac{1}{2}n$

H $2n + 5$

J $2n - 5$

2006

Date _____

The base of a triangle is 3 units more than h, its height. Which expression represents its area?

F $h(h + 3)$

G $\frac{1}{2}h(h + 3)$

H $h(h - 3)$

J $\frac{1}{2}h(h - 3)$

2005

A consulting engineer bills his customers $90 for each hour he works. If a client's bill is $955, which equation could be used to find the number of hours worked?

F $\frac{90}{x} = 955$

G $\frac{x}{955} = 90$

H $90x = 955$

J $955x = 90$

2004

Jill was looking at a picture of herself and 3 friends. She measured the height of her image as 10 centimeters. If Jill is actually 60 inches tall, which equation can she use to find h, the actual height in inches, of one of her friends who is c centimeters tall in the picture?

A $h = 10c$

B $h = 6c$

C $h = \frac{5}{3}c$

D $h = \frac{1}{6}c$

2003

Which expression correctly describes x divided by the sum of y and 7?

A $x \div y + 7$

B $\frac{x}{y + 7}$

C $\frac{x}{y} + 7$

D $\frac{y + 7}{x}$

2002

Each week Jessica earns a 2% bonus on any sales she makes over $600. She also receives a fixed salary of $190 per week. If Jessica sold $1,300 worth of merchandise in a week, which equation could be used to determine her total earnings, t, for the week?

F $t = (0.02)[1.90 + (1{,}300 - 600)]$

G $t = 190 + (0.02)(600)$

H $t = (190 + 600)(0.02)$

J $t = 190 + (0.02)(1{,}300 - 600)$

2002

Victor bought a computer for $1,800. He made a down payment of $200 and will pay the rest in 5 equal payments. If p represents the amount of each payment, which equation can be used to find this amount?

F $\$200p = \$1{,}800$

G $\$1{,}800 + 5p = \$200$

H $\$1{,}800 + \$200 = 5p$

J $\$1{,}800 = 5p + \$200$

2001